State Plans TSD

PREAMBLE CONTEXT TO HELP YOU UNDERSTAND THE DIFFERENT STATE PLANS, WE ARE NOT RESHAPING THIS SECTION, BACKGROUN ONLY.

A. Overview

After the EPA establishes the emission guidelines, each state[1] shall then develop, adopt and submit a state plan under CAA section 111(d). Each state must decide whether it will apply the CO_2 emission performance rates to affected EGUs, or adopt and implement, in the rate-based metric or in the mass-based metric, the CO_2 emission goals set forth by the EPA for the state. As already stated, the EPA is establishing goals for each state as the device by which it is ensuring that states and affected EGUs enjoy the maximum flexibility and latitude in meeting the requirements of the emission guidelines. For its plan, a state will be able to choose to either impose federally enforceable emission standards that fully meet the emission guidelines directly on affected EGUs (the "emission standards" approach) or use a "state measures" approach, which would be comprised, at least in part, of measures implemented by the state that are not included as federally enforceable components of the plan, with a backstop of federally enforceable standards on affected EGUs that fully meet the emission guidelines and that would be triggered if the state measures fail to result in the affected EGUs achieving on schedule the required emissions reductions.

In developing the plan, the state rulemaking process must meet

[1] In this section, the term "state" encompasses the 50 states and the District of Columbia, U.S. territories, and any Indian tribe that has been approved by the EPA pursuant to 40 CFR 49.9 as eligible to develop and implement a CAA section 111(d) plan.

the minimum public participation requirements of these guidelines, including a public hearing and engagement with all members of the public, including communities. Within the time period specified in the emission guidelines (from as early as August 31, 2016, depending on whether the state receives an extension), the state must submit its complete state plan to the EPA. The EPA then must determine whether to approve or disapprove the plan. If a state does not submit a plan, or if the EPA disapproves a state's plan, then the EPA has the express authority under CAA section 111(d) to establish a federal plan for the state. Following implementation of its plan, each state must demonstrate to the EPA that its affected EGUs are meeting the interim and final performance requirements included in this final rule.

In the case of a tribe that has one or more affected EGUs located in its area of Indian country, if the EPA determines that a CAA section 111(d) plan is necessary or appropriate, the EPA has the responsibility to establish a CAA section 111(d) plan for that area of Indian country where affected EGUs are located, unless the tribe on whose lands an affected EGU is located seeks and obtains authority from the EPA to establish a plan itself, pursuant to the Tribal Authority Rule.[2]

C. State Plan Approaches

1. Overview

Under the final emission guidelines, states may adopt and submit either of two different types of state plans. The first would apply all requirements for meeting the emission guidelines to affected EGUs

[2] See 40 CFR 49.1 to 49.11.

in the form of federally enforceable emission standards,[3] which we refer to as an "emission standards" state plan type. The second, which we refer to as a "state measures" plan type, would allow the CO_2 emission performance rates or state CO_2 emission goals to be achieved in part, or entirely, through state measures[4] that apply to affected EGUs, other entities, or some combination thereof. The state measures plan type also includes a backstop of federally enforceable emission standards for affected EGUs that would apply in the event the plan does not achieve its anticipated level of emission performance.

These two types of state plans and their respective approaches, either of which could be implemented on a single-state or multi-state basis, allow states to meet the statutory requirements of CAA section 111(d) while accommodating the wide range of regulatory requirements and other programs that states have deployed or will deploy in the electricity sector that reduce CO_2 emissions from affected EGUs. Further, as described in detail below, both types of plans are responsive to comments we received from states and other stakeholders.

As described below, the EPA believes that each state is able to satisfy the requirements of the final emission guidelines by implementing a plan that applies all requirements to the affected EGUs in the form of federally enforceable emission standards that

[3] 40 CFR 60.21(f) defines "emission standard" as "a legally enforceable regulation setting forth an allowable rate of emissions into the atmosphere, establishing an allowance system, or prescribing equipment specifications for control of air pollution emissions."

[4] "State measures" refer to measures that the state adopts and implements as a matter of state law. Such measures are enforceable only per state law, and are not included in and codified as part of the federally enforceable state plan.

achieve the CO_2 emission performance rates or applicable state CO_2 emission goal. Under the emission standards state plan type, the EPA is finalizing three approaches for state plans: rate-based emission standards for affected EGUs, mass-based emission standards for affected EGUs and other emission standards for affected EGUs in the form of a rate or mass standard that results from application of an operational standard.[5]

While the EPA believes that the CO_2 emission performance rates can be met, or states can achieve their CO_2 emission goals, through this first type of state plan, which applies federally enforceable emission standards to affected EGUs, the agency also recognizes that many states have existing or planned programs that limit CO_2 emissions from affected EGUs or those that replace or avoid generation from affected EGUs and result in CO_2 emission reductions. This includes market-based emission budget trading programs that apply to affected EGUs, such as the programs implemented by California and the RGGI participating states, as well as RE and demand-side EE requirements and programs, such as renewable portfolio standards (RPS), energy efficiency resource standards (EERS), and utility- and state-administered incentive programs for the deployment of RE and demand-side EE technologies and practices. The EPA is providing additional flexibility to states to accommodate such requirements and programs through a "state measures" plan.[6]

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[5] Both rate-based and mass-based emission standards could be implemented by states in different ways, including limits that apply to specific affected EGUs and market-based emission trading programs. These variants are outlined below.

[6] Note that emission budget trading programs that meet certain basic design criteria may also be included in an "emission

The state measures plan type is composed of measures adopted and implemented by the state that, at least in part, are not included as federally enforceable components of the plan, but result in achievement of the CO_2 emission performance rates or the applicable state rate-based or mass-based CO_2 emission goal. These state measures could apply to affected EGUs and/or other entities. In a state measures plan, the state must demonstrate how its state measures (in conjunction with any federally enforceable emission standards for affected EGUs that the state chooses to include as part of the state plan) will either meet the CO_2 emission performance rates or achieve the state CO_2 emission goal for affected EGUs. Additionally, the state must include in its state plan a "backstop" that will apply federally enforceable emission standards to affected EGUs sufficient to meet the CO_2 emission performance rates or state CO_2 emission goal if the plan fails to achieve the required level of CO_2 emission performance during specified plan performance periods. These backstop federally enforceable emission standards will assure that affected EGUs achieve the CO_2 emission performance rates or state CO_2 emission goal per the requirements of CAA section 111(d) if the state measures fail to result in the expected level of emission performance.

The EPA notes that for both an emission standards plan or a state measures plan, if a state chooses the option of meeting a state rate or mass CO_2 emission goal, the metric chosen for the goal is independent from the measures that implementing authorities may adopt to achieve them. For example, a state could potentially adopt mass-based emission standards and/or other measures and demonstrate that

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standards" plan, as described below.

its plan will achieve a rate-based CO_2 goal. Likewise, a state could adopt rate-based emission standards and/or other measures and demonstrate that its plan will meet a mass-based CO_2 goal.

3. "Emission standards" state plan approach

The first type of state plan imposes requirements solely on affected EGUs in the form of federally enforceable emission standards, which we refer to as an "emission standards" plan. This type of state plan, as described below, may consist of rate-based emission standards for affected EGUs; mass-based emission standards for affected EGUs; and other emission standards for affected EGUs in the form of a rate- or mass-based emission standard that results from application of an operational or other standard. Under this approach, the state plan submittal must demonstrate that these federally enforceable emission standards for affected EGUs will achieve the state CO_2 emission goal or CO_2 emission performance rates or the applicable rate-based or mass-based state CO_2 emission goal.

a. Rate-based approach. The first type of "emission standards" plan approach a state may choose is one that uses rate-based emission standards. Under this plan approach, the plan would include federally enforceable emission standards for affected EGUs, in the form of lb CO_2/MWh emission standards.

A rate-based "emission standards" plan may be designed to either meet the CO_2 emission performance rates for affected EGUs or achieve the state's rate-based CO_2 emission goal for affected EGUs.

A plan could be designed such that compliance by affected EGUs

would achieve either the CO_2 emission performance rates for affected EGUs or the state rate-based CO_2 emission goal. To meet the CO_2 emission performance rates, a plan would establish separate rate-based emission standards for affected NGCC and fossil steam EGUs (in lb CO_2/MWh) that are equal to or lower than the CO_2 emission performance levels in the emission guidelines. To meet a state rate-based CO_2 goal, a plan would establish a uniform rate-based emission standard (in lb CO_2/MWh) that applies to all affected EGUs in the state. This uniform emission rate would be equal to or lower than the applicable state rate-based CO_2 goal specified in Table [cross reference to finalized table of state rate goals].

b. Mass-based approach. The second "emission standards" approach a state may elect to use is mass-based emission standards applied to affected EGUs. Under this approach, the plan would include federally enforceable emission standards on mass CO_2 emissions from affected EGUs that are designed to achieve the mass-based CO_2 goal for a state's affected EGUs [refer to table with mass goals].[7]

Under a mass-based approach, a state could require that individual affected EGUs meet a specified mass emission standard. Alternatively, a state could choose to implement a market-based

[7] The EPA notes that states could also apply mass emission limits on affected EGUs that are designed to achieve a state's rate-based goal. Under this type of approach, the state would be required to include a demonstration, in the supporting materials for its plan submittal, of how its plan would achieve the goal. This demonstration would include a projection of the collective, weighted average CO_2 rate it anticipates the fleet of affected EGUs would achieve as a result of the mass emission limits placed on affected EGUs. Once the plan is implemented, if the rate goal is not achieved for the fleet of affected EGUs as a whole, corrective measures would need to be implemented, as described in [section VII.D.2.].

emission budget trading program. The EPA envisions that the latter option is most likely to be exercised by states seeking to implement a mass-based emission standard approach, as it would maximize compliance flexibility for affected EGUs and enable the state to meet its mass goal in the most economically efficient manner possible.

(1) Mass-based emission standard applied to individual affected EGUs. One pathway a state could take to achieve its mass-based CO_2 goal would be to apply mass-based emission standards to individual affected EGUs, in the form of a limit on total allowable CO_2 emissions. These emission standards would be designed such that total allowable CO_2 emissions from all affected EGUs in a state are equal to or less than the state's mass-based CO_2 goal. The individual affected EGUs would be required to emit at or below their mass-based standard to demonstrate compliance. Under this approach, individual affected EGUs would be required to undertake source-specific measures to assure their CO_2 emissions do not exceed their assigned emission limit. Affected EGU compliance with the emission standards prescribed under this type of mass-based approach would ensure that the affected EGUs in a state achieve the state's mass-based CO_2 goal.

Mass-based emission standards included in a state plan must be quantifiable, verifiable, enforceable, non-duplicative and permanent. These requirements are described in more detail at section [VIII.D.2].

(2) Mass-based emission standard with a market-based emission budget trading program. A second pathway a state could take to achieve its mass-based CO_2 goal would be to implement a market-based emission budget trading program. This type of program provides maximum

compliance flexibility to affected EGUs, and as a result, may be attractive to states who choose to implement a mass-based approach in their state plan.

An emission budget trading program establishes a combined emission standard for a group of emission sources in the form of an emission budget. Emission allowances are issued in an amount up to the established emission budget.[8] Allowances may be distributed to affected emission sources through a number of different methods, including direct allocation to affected sources or auction. These allowances can be traded among affected sources and other parties. The emission standard applied to individual emission sources is a requirement to surrender emission allowances equal to reported emissions, with each allowance representing one ton of CO_2.[9]

4. "State measures" state plan type

The second type of state plan is what we refer to as a "state measures" plan. As previously discussed, the EPA believes states will be able to submit state plans under the emission standards plan type, and its respective approaches, and achieve theCO_2 emission performance rates or rate-based or mass-based state CO_2 goals by imposing federally enforceable requirements on affected EGUs. Upon further consideration

[8] An emission allowance represents a limited authorization to emit, typically denominated in one short ton or metric ton of emissions.

[9] [Brief description of general compliance approaches for individual sources under an emission budget trading program.]

of the requirements of CAA section 111(d), and in consideration of the comments we received on the proposed portfolio approach, the EPA is finalizing the state measures plan type in addition to the emission standards plan type. The EPA believes the state measures plan type will provide states with additional flexibility to accommodate existing or planned programs that involve measures implemented by the state, or by entities other than affected EGUs, that result in avoided generation and CO_2 emission reductions at affected EGUs. The EPA believes this second state plan type will afford states with appropriate flexibility while meeting the statutory requirements of CAA section 111(d).

Measures implemented under the state measures plan type could include RE and demand-side EE requirements and deployment programs. This type of plan could align with existing state resource planning in the electricity sector, including RE and demand-side EE investments by state-regulated electric utilities. The state measures plan type also can accommodate emission budget trading programs that address a broader set of emission sources than just affected EGUs subject to CAA section 111(d), such as the programs currently implemented by California and the RGGI participating states in the Northeast and Mid-Atlantic.

This plan type would allow the state to implement a suite of state measures that are adopted, implemented, and enforceable only under state law, and rely upon such measures[10] in achieving the

[10] "State measures" refer to measures that the state adopts and implements as a matter of state law. Such measures are enforceable only per applicable state law, and are not included in the federally enforceable state plan.

required level of CO_2 emission performance from affected EGUs. The state measures under this plan type could be measures involving entities other than affected EGUs, or a combination of such measures with emission standards for affected EGUs, so long as the state demonstrates that such measures will result in achievement of the CO_2 emission performance rates or applicable state CO_2 goal. The EPA notes that under this plan type, a state could also choose to include any emission standards for affected EGUs as federally enforceable requirements in the state plan to be implemented alongside or in conjunction with state measures the state would implement and enforce.

THIS TEXT BELOW IS IN PREAMBLE AND THIS IS THE SECTION YOU WILL HELP SHAPE and STREAMLINE/PROPERLY DELINIATE ASSUMPTIONS:

(4) Demonstration that the emission standards contained in the plan are projected to achieve the state's CO_2 emission goal or the CO_2 emission performance rates. A state plan submittal must demonstrate that the federally enforceable emission standards on affected EGUs, are sufficient to meet either the CO_2 emission performance rates or the state's CO_2 emission goals for the interim period of 2022-2029, including interim step 1 2022-2024 period; interim step 2 2025-2027 period and interim step 3 2028-2029 period and the final period of 2030 and beyond. The type of demonstration required for emission standards plans demonstration will vary depending on how the emission performance standards are applied across the fleet of affected EGUs, as described below. [*Note, we will likely move some of the details regarding how the state can project future performance for both the emission standards plan and the state measures plan to a TSD*]

(a) Demonstration for a rate-based emissions performance standards state plan. Whether or not a state is required to include a demonstration for a rate based emissions performance plan depends on which type is submitted to the EPA. When a state submits an emissions standard plan that establishes separate rate-based emission standards for affected NGCC and fossil steam EGUs (in lbs CO_2/MWh) that are equal to or lower than the CO_2 emission performance levels (either as a weighted average or on individual EGUs) in the emission guidelines, then no additional demonstration is required. The state must include in the state plan components evidence that each of the affected EGUs within the state or multi-state plan have federally enforceable emission standards in the form of a lb CO_2/MWh emission standard at a level that equals the CO_2 emission performance rates for each source subcategory finalized in this action.

If a state chose to instead apply rate-based emission performance standards to individual affected EGUs, or to categories of affected EGUs, at a lb CO_2/MWh rate that differs from the CO_2 emission performance rates or the state's rate-based CO_2 goal then a demonstration would be required. If there are any affected EGUs in the state that exceed the state's emission rate goal, the state must demonstrate that the weighted average CO_2 rate of affected EGUs, when weighted by generation (in MWh), will be equal to or less than the state's emission rate goal to demonstrate the fleet of affected EGUs would achieve as a result of their individual standards. In this projection, for both the interim period and final period as well as the interim steps (interim step goal 1 for 2022-2024; interim step goal 2 for 2025-2027; interim step goal 3 for 2028-2029), the state

plan would include the following key information, at a minimum, to demonstrate the emission standards on each EGU are commensurate with the state's goal:

- a summary of each affected EGU future operation characteristics, including annual generation, emissions, capacity and capacity factors;
- planned retirements;
- a detailed description of the zero CO_2 emitting demand side EE or RE generation the state's affected EGUs expect to use to adjust the reported emission rate including by not limited to, the amount of generation by technology-type (e.g., wind, solar, EE), the physical location of the EE or RE generation, and power purchase agreements (PPAs) and other long-term power contracts; and an explanation, with calculation, of how these measures are being used to adjust the rate;
- expected demand growth at the state or regional level, including the source and basis for these estimates (e.g., based on population growth, GDP, adoption of demand side EE or other applicable factors); if demand growth is not from NERC, an RTO, EIA or other publically available source then the state will need to provide justification and assumptions that inform the demand growth used;
- expected fuel switching;
- heat rate improvements and
- any other applicable assumptions used in the demonstration.

(b) Demonstration for a mass-based emissions standards state plan. A mass-based "emissions standards" state plan demonstration of future CO_2 performance would include evidence that each of the affected EGUs within the state have federally enforceable emission standards, in the form of a CO_2 emission ton standard that, when summed together, are equal to or less than the state's mass-based emission goal in both the interim period and final period. When the sum of the mass equivalent CO_2 emission limit for the affected EGU are equal to the state's emission rate goal, no further demonstration would be necessary by the state to indicate that its plan would achieve the state's mass-based goal. When the mass-based goal applies to a group of affected EGUs or is administered through a market-based emission budget trading program, then a demonstration must include state provisions and enabling legislation, when applicable, as evidence that states have the appropriate authority and procedures in place to facilitate the emissions averaging and/or market based system, such as provisions for state allocation of allowances, provisions for tracking of allowances from issuance through submission for compliance, and the process for affected EGUs to demonstrate compliance. Refer to Section VII.B.3.b for details on mass-based emission standard state plan options.

(4) Demonstration that the standards and/or measures are projected to achieve the CO_2 emission performance rates or state CO_2 emission goal. A state plan submittal must demonstrate that the federally enforceable emission standards for affected EGUs, if included, and state measures, are sufficient to attain the CO_2 emission performance rates or state rate-based or mass-based CO_2

emission goal for the interim period of 2022-2029 and the final period of 2030 and beyond. The elements required in the state demonstration will vary depending on the design of the state plan, as described below in this section.

(a) Demonstration for a state measures state plan. A state measures plan submittal must demonstrate that the state measures, whether alone or in conjunction with any federally enforceable CO_2 emission standards, will achieve either the CO_2 emission performance rates or the state rate-based or mass-based CO_2 goals in the emission guidelines for the interim and final periods. This includes the interim period of 2022-2029, including interim step 1 2022-2024 period, interim step 2 2025-2027 period, and interim step 3 2028-2029 period (or alternative CO_2 emission performance step levels adopted by the state, provided they result in achievement of the CO_2 emission performance rates or state CO_2 emission goal during the 2022-2029 interim period), as well as the final period of 2030 and beyond.

A satisfactory demonstration of the future CO_2 performance of quantifiable and verifiable state-enforceable measures must use technically sound quantification methods that are reliable and replicable. The demonstration must be supported by the methods and measurement procedures by which the federally enforceable CO_2 emission standards for affected EGUs are reliably measured, if these standards are incorporated into the state measures state plan. In addition, the demonstration must include details about individual state-enforceable measures (or bundled measures), timing for implementation and future MWh impacts of these measures. The future performance of affected EGUs

must be based on verifiable and quantifiable energy and emissions quantification methods accompanied with underlying analytical assumptions and verifiable data sources used to demonstrate future CO_2 performance by affected EGUs under this type of state plan.

A satisfactory state measures plan demonstration must include a state measures CO_2 performance projection that shows how the measures in the state plan, alone or in conjunction with federally enforceable CO_2 emission standards, will achieve the future CO_2 performance at affected EGUs. Elements of this projection must include the following for the interim and final periods:

- An explanation of the tools and emission quantification approaches used in the projection (described in section VIII.D.2.c.(4)(b).
- State Measures Plan CO_2 Performance Projection that includes all state measures and/or emission standards in the state plan (see the State Plans Technical Support Document for details).
- Underlying assumptions used in the projection (as described below in sections VIII.D.2.c.(4)(b),(c) and (d).

(b) Emission quantification approaches and tools. The EPA received comments on whether we would require specific modeling tools and input assumptions. Commenters raised concerns that the EPA may require states to use proprietary models because many states do not have the financial resources to conduct their own modeling using utility dispatch models or capacity expansion models. The EPA is not requiring a specific type of emission quantification approach or model, as long

as the one chosen uses technically sound methods that establish a clear relationship between electricity grid interactions of the state enforceable measures, affected EGU dispatch, generation cost and operations within the time frame outlined in these guidelines. Emission quantification methodologies could range from historical estimates using growth rate or statistical analysis to electric sector energy modeling. If a state chose to include supplemental material on emission baseline projections, then the emissions quantification method used for both the baseline projection and state measure plan scenario should be similar. A state should include an explanation of how the emission quantification method works and the associated tool(s) that employ the method, as well as an explanation for why the methodology and tool chosen is best suited for an electric sector analysis of affected EGUs for the interim period and final period. The results in the demonstration must be verifiable and reproducible using the documented assumptions described in the following paragraph.

The projections of EGU dispatch and generation can differ from the EPA's forecast in the RIA, but should have a clear relationship between future electricity demand, costs and generation capacity to establish the projected future CO_2 emissions from affected EGUs. The following assumptions demonstrating the relationship between the state measures and CO_2 emission performance of affected EGUs should be documented and explained: projected CO_2 emission rates in lbs/MWh; projected CO_2 emissions; projected generation at the EGU in MWhs; fuel prices, when applicable; heat rates for each affected EGU; wholesale electricity prices, when available; projected emission limits and/or rates as a result of environmental or economic constraints; planned

retirements; planned new generation; fuel switches at affected EGUs; fixed operations and maintenance costs, when applicable; variable operations and maintenance costs, when applicable; and planning reserve margins, when applicable.

(c) Elements of a rate-based state measures plan. Under a rate-based state measures plan, MWh from state enforceable qualifying measures may be used to adjust the CO_2 emission rate of affected EGUs when demonstrating achievement of the CO_2 emission performance rates or the state rate-based CO_2 goal in the emission guidelines. The state plan would include the following key information, at a minimum, to demonstrate the rate-based state measures plan for affected EGUs are commensurate with the state's goal:

- a summary of each affected EGU's anticipated future operation characteristics, including annual generation, CO_2 emissions, capacity and capacity factors;
- planned retirements;
- a detailed description of the zero CO_2 emitting demand-side EE savings and RE generation (and any other qualifying MWh) from state measures that will be available for use in adjusting the reported CO_2 emission rates of affected EGUs, including, but not limited to, the amount of generation or savings by technology-type (e.g., wind, solar, EE), the physical location of the EE measures or RE generation, and any other relevant information (e.g., power purchase agreements (PPAs) and other long-term power contracts); and an explanation, with calculation, of how these measures are

being used in the projection to adjust the CO_2 emission rate of affected EGUs;

- expected electricity demand growth at the state or regional level, including the source and basis for these estimates (e.g., based on population growth, GDP, adoption of demand-side EE or other applicable factors); if demand growth is not from NERC, an ISO or RTO, EIA or other publicly available source, then the projection must include justification and assumptions that inform the demand growth used;
- expected fuel switching at affected EGUs;
- heat rate improvements; and
- any other applicable assumptions used in the projection.

In the state plan demonstration, the state must show the calculation of this adjustment from these state enforceable actions at their affected EGUs either in aggregate or at each affected EGU. As specified in section VIII.G, the zero-emitting MWhs of EE and RE can be added to the denominator of the emission rate of the affected EGUs. The demonstration should illustrate this arithmetic adjustment for rate-based state measure plans.

(d) Elements of a mass-based state measures plan. Under a mass-based state measures plan, a state must demonstrate that the combined state-enforceable measures, along with any federally enforceable CO_2 emission standards for affected EGUs, if included, will achieve the state mass-based CO_2 goal. Because these measures could have varying degrees of impact on CO_2 emissions from affected EGUs, the approach a state

chooses to quantify projected emissions impacts should have the capability to demonstrate how the combined state enforceable measures are impacting CO_2 emissions at affected EGUs so that the sum of emissions at all affected EGUs will be lower than or achieve the state's CO_2 emission goal for each specified time period in the emission guidelines. The EPA is not requiring a specific method or tool, but clear documentation of assumptions and explanation of methods used, as discussed in section VIII.D.2.c and in the State Plans Technical Support Document, must be included in a satisfactory demonstration.

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1. Projecting Emissions Performance (CURRENTLY SLATED FOR TSD, WE'LL NEED AN INTRO FOR THIS SECTION AND THINK ABOUT IF WE WANT TO ADD ANY TECHNICAL DETAIL FOR THE EMISSION STANDARDS PLANS

a. State measures plan projected CO2 performance. As indicated in section VIII.D.2.c(4)(a), a state plan submitted under a state measures approach, either rate-based or mass-based, would require a demonstration that the state measures are sufficient to attain the state's CO2 emission goals for the interim period, final period and beyond.

The state measures plan projected performance would indicate the combined future generation and CO_2 impacts of all the measures included in the state plan to demonstrate the state would achieve its state goal, relative to a determined baseline. The state measure projected CO_2 performance must start with a baseline or business-as-usual demand forecast as the basis for estimating how future generation requirements will grow over time. The baseline also must include a forecast of the electricity generation and associated fuel types needed to meet future demand. It also includes the impacts of existing energy and environmental regulations that are on the books. To meet the non-duplicative requirements, the baseline demand forecast would

not include explicit demand-side EE impacts of the state measures that are included in state measures plan CO_2 performance projection and used to achieve the future CO2 goals or performance standards. Likewise incremental other state measures used to achieve the CO_2 goals or performance standards and included in the state measures plan CO_2 performance projection would not be in the baseline supply side forecast. A state could also choose to include an emission baseline projection based on the energy and supply baseline forecast as supporting material. A state measure performance projection is a useful way for a state to determine the magnitude of emissions impacts of specific measures. The emissions baseline forecast is also a helpful calibration tool during the approval process.

The EPA received comments on what type of data sources would be acceptable to the EPA when constructing an electricity demand and supply baseline projection. Commenters asked if certain publically available data sources would be permissible. In response, EPA is listing the data sources that the EPA finds acceptable to use in these forecasts. A state can choose to construct its own baseline electricity demand and supply forecast and use the assumptions from publicly available data sources; alternatively, a state could adopt a forecast from publicly available data sources, including the Energy Information Administration (EIA), North American Reliability Corporation (NERC), National Renewable Energy Labs (NREL), RTOs, ISOs, regional councils that coordinate energy planning, State Energy Office or PUC. These or other data sources can be used as long as the growth

rate; economic conditions, such as fuel costs, CO_2 prices, technology costs; EE impacts; and electricity generation assumptions are documented and the forecast does not include the MWh impacts of state measures the state will use to achieve the required level of CO_2 emission performance standards from affected EGUs, including explicit demand-side EE measure impacts, enforceable standards, when applicable, or incremental RE generation or other generation technologies. If a state uses other data sources, it must justify why these sources are more appropriate, better reflect the baseline conditions and include the documented assumptions listed above. In addition, a state or group of states should not selectively use favorable assumptions from different data sources, unless those assumptions represent a similar future outlook.

Because electricity flows across state boundaries, single state plan demonstrations must explain the regional information considered in developing the assumptions, when available, this includes, comments from the RTO or regional planning authorities. Multi-state plans or plans sharing common elements should use regional assumptions or demonstrate reconciliation of any inconsistencies between state-level assumptions. When multi-state plans involve emission budget trading program with sources other than affected EGUs, the demonstration must show how the affected EGUs will meet the state goal under the trading program.

When constructing the state measure projected CO_2 performance demonstration, a state (or group of states for multi-state plans) would change the baseline projection to show the collective

electricity and emission impacts of the state measures included in the state plan with achieve the future interim and final CO_2 goal in the guidelines. The eligibility requirements for state enforceable measures that can be included in a state measure plan can be found in section [XX]. A state could choose to include a range of future projected impacts representing different economic scenarios as supporting information in its demonstration. A When determining the magnitude of energy impacts, the state could incorporate EE and RE impacts at the project level, program level or aggregate EE or RE MWh impacts at the portfolio of programs level. The EPA has historically accepted the estimation of EE and RE at an aggregated level as indicated in the EPA's Bundled Measures Guidance.[11] When applicable, the assumptions used to forecast the expected state enforceable EE and RE (in MWhs) over the timing horizon specified in these guidelines should be consistent with assumptions specified in EM&V plan, when submitting a rate-based state measures plan. For demand-side EE, the first year and cumulative gross energy savings as a result of actions after the year 2012 can be incorporated in this projection. The state would incorporate the projected cumulative savings through the interim periods including the interim steps (interim step 1 for 2022-2024; interim step 2 for 2025-2027; interim step 3 for 2028-2029) and final period in 2030 and beyond. Likewise, if the impacts of the demand-side EE program are based on program expenditures, the state can estimate the energy savings per dollar of programs spending (excluding customer spending). The demonstration

[11] Guidance on Incorporating Bundled Measures in a State Implementation Plan, August 16, 2005, http://www.epa.gov/ttn/oarpgold/t1/memoranda/10885guideibminsip.pdf.

should include documentation and a justification for any metrics that translate dollars spent to energy saved. Typically budgets are approved on a triennial basis, and, therefore, states should assume the same program funding amount will be available in the years following the last approved budget cycle, unless other assumptions can be justified when projecting expected future expenditures through the interim and final period timeframe.

For supply-side RE generation, a state can quantify the energy impacts of RE generation in MWhs if they have been installed after the year 2012 and are beyond existing generation resources included in the baseline supply side forecast. The state can use the capacity (MW), capacity factor, generation technology/fuel type (wind, solar, qualifying biomass) and expected hours of operation to determine the annual MWhs for the interim periods including the interim steps (interim step 1 for 2022-2024; interim step 2 for 2025-2027; interim step 3 for 2028-2029) and final period in 2030 and beyond.

The CO_2 performance demonstration should include the combined impacts of all state enforceable measures, including EE and RE and when applicable, and CO_2 emission standards for affected EGUs. For example, a mass-based state measures plan that incorporates an emissions budget trading program that includes a broader set of emission sources, such as programs implemented by California and the RGGI participating states, would fall under the state measures state plan approach. The state would show that the state enforceable emissions budget trading program and combined state measures ensure that the sum of emissions at all affected EGUs will be lower than or equal to the state's CO_2 emission goal in the time periods specified in these guidelines. States could also demonstrate achievement of their

future performance standards by submitting information showing that the future emission rates of affected EGUs will be equal to or lower than the emission rates described in the guidelines for NGCC and fossil steam EGUs by each source category.

2. Interstate effects

Content is examples of the process for making demonstrations that RE located in a mass-based state meets conditions that allow it to be credited in a rate-based state. There was content on how to deal with EE, but we were instructed to accept a comment from OP to be silent on specific treatment of EE.

The following is the preamble content in question, it's at the end of the Interstate Effects Section Sec. VIII.G.2.

The following are examples of how requirements for a demonstration could be established in state plans and used to allow a resource in a mass-based state to be counted in a rate-based state. For an emissions standards state plan, a state could specify in the regulations for the rate-based emission standards included in its state plan that it will require a provider of RE that seeks the issuance of ERCs to show that entities in the rate-based state have contracted for the delivery of the RE generation that occurs in a mass-based state to meet load in a rate-based state. Under this approach, an RE provider in a mass-based state could submit as part of an eligibility application a delivery contract or power purchase agreement showing that the energy savings were procured by the utility, and were treated as comparable to a generation resource used to serve regional load

that included the rate-based state. This documentation would be sufficient demonstration to allow the RE generating resource to meet the additional geographic eligibility requirement for generation of ERCs. All quantified and verified MWhs submitted for ERC issuance would need to be associated with that power purchase contract or agreement, and this fact would need to be demonstrated in the monitoring and verification reports submitted for issuance of ERCs.

Under a state measures rate-based plan, a state could require that any eligible MWhs that the state claims from a mass-based state are the result of contracted arrangements between entities in the rate-based state and providers in the mass-based state. If the state plan was approved by the EPA, such demonstrations would need to be submitted with the state's demonstration of how its state measures meet the CO_2 emission performance rates or achieve the state rate-based CO_2 emission goal for affected EGUs.

3. Multi-state plans

4. Non-BSER measures